

## Lead Laboratory Report Notification Message Mapping Guide

**VERSION: LeadLabReportNationalNotificationMapv1.0 dated 8/17/2007.**

This Message Mapping Guide describes the content and message mapping specifications for the set of data elements used to communicate information to meet the requirements for Lead Laboratory Report notifications to CDC. The intended audience for this document are the state/local and CDC programs and other public health related organizations interested in using the HL7 V2.5 case notification message specification for transmitting their data elements.

The ORU^R01 - Unsolicited Observation Message is the HL7 standard message used to pass the Nationally Notifiable Condition Report message. The National Notification message is used to convey a de-identified subset of investigation/surveillance information to meet national reporting requirements, where CDC is the only receiver. Additional information about the methodology utilized for national notifications as an ORU message can be found in Section 2 of the [MESSAGE STRUCTURE SPECIFICATION for NATIONAL CONDITION REPORTING Version 1.0](#) document. This document specifies the structure and methodology for the use of the Health Level 7 (HL7) Version 2.5 Unsolicited Result Message (ORU^R01) that supports the electronic interchange of any de-identified Nationally Notifiable Condition message from public health entities to the CDC.

### References

Version 1.0 of the [Message Specification Guide](#) is used to inform the mapping methodology for this guide. *Notify CDC Message–All PAMs* from NEDSS PAM Platform Team. Last updated 1/26/2007. *NEDSS PAM Platform Help Guide*, 11/30/2006.

### Understanding the Organization of the Mapping Guide

<a href="#">Data Element Index</a>	This tab provides the complete list of data elements of interest requested by the program. The last column cross-references to the tab where the data element is fully specified for messaging.
<a href="#">Revisions</a>	This tab is intended to provide revision control for updates made to the document.
<a href="#">Key</a>	Column descriptions for the tabs using the mapping methodology.
<a href="#">Subject-related</a>	This tab provides the mapping methodology for the demographic variables requested by the program.
<a href="#">Lead Lab Rpt Obs.</a>	This tab provides the mapping methodology for the content requested by the program for this specific notification.
<a href="#">Notification Structure</a>	This tab provides the structural elements for the Notification. These variables are not negotiable. Default values are provided for HL7 structural elements that are required but not part of the surveillance data requested.
<a href="#">Example</a>	This tab contains a message that conforms in structure to the Message Specification Guide and in content to this version of the Message Mapping Guide. This message is for example purposes and should not be used as the source of truth for coding, data mapping, or other content.

### Variables as Observations

Other than the variables that map to the Patient Identifier segment (see Subject-Specific tab), all other variables are passed as a series of OBX-Observation/Result segments that are logically tied to the OBR-Observation Request “section header” segment that immediately precedes it. This content presents the real differences between the messages since all types of Notifications are handled in a standard manner up to this point.



PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Valid Values	Data Validation	TAB REFERENCE
CORE DEMOGRAPHIC DATA ELEMENTS								Subject-related
DEM197	Local patient ID	The local ID of the patient/entity.	Alphanumeric	R				Subject-related
DEM147	State patient ID	Patient ID value assigned by the state	Alphanumeric	O				Subject-related
DEM115	Birth Date	Date of birth in YYYYMMDD format	Date	O				Subject-related
DEM114	Patient's birth sex	Patient's birth sex	Code	O		Male Female Unknown		Subject-related
DEM152	Race Category	Field containing one or more codes that broadly refer to the patient's race(s).	Code	O	Y	American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; White; Other Race		Subject-related
DEM165	Patient Address County	County of residence of the subject.	Code	O	Y	FIPS county codes		Subject-related
DEM162	Patient Address State	Patient's address state.	Code	O	Y	FIPS state codes		Subject-related
DEM163	Patient Address Zip Code	Patient's address Zip code.	Alphanumeric	O	Y			Subject-related
DEM155	Ethnic Group Code	Ethnic origin or ethnicity is based on the individual's self-identity of the patient as Hispanic or Latino; choose one value from the list.	Code	O		Hispanic Non-hispanic		Subject-related
EXTENDED DEMOGRAPHIC DATA ELEMENTS								
DEM153	Detailed Race	A patient record may have zero, one, or multiple detailed race categories assigned. This variable is not passed unless specified for the particular condition.	Code	O	Y	<see vocab download>	Detailed Race	Subject-related

PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Valid Values	Data Validation	TAB REFERENCE
DEM156	Detailed Ethnicity	If the value specified in Ethnicity is Hispanic or Latino, choose detailed ethnicity value(s) that better define the patient's Latino ethnicity; values may include Cuban, Mexican, etc.; choose one or multiple values from this list. This variable is not passed unless specified for the particular condition.	Code	O	Y	<see vocab download>	Detailed Ethnicity	Subject-related
DEM2010	Address ID	The system-assigned unique address ID	Alphanumeric	O	Y			Subject-related
DEM161	Patient Address City	Patient's address city as text	Alphanumeric	O	Y			Subject-related
DEM168	Census Tract	Census tract where the address is located is a unique identifier associated with a small statistical subdivision of a county. Census tract data allows a user to find population and housing statistics about a specific part of an urban area. A single community may be composed of several census tracts.	Alphanumeric	O	Y			Subject-related
DEM169	Residence From Date	Residence <i>From</i> date.	Date	O	Y			Subject-related
DEM170	Residence To Date	Residence <i>To</i> date.	Date	O	Y			Subject-related
LEAD LAB REPORT DATA ELEMENTS								
INV178	Pregnancy Status	Indicates whether the patient was pregnant during the event.	Code	O		Yes No Unknown		Generic Obs.
NOT109	Reporting State	State reporting the investigation/case	Code	R				Generic Obs.
LEA105	Previous country of residence	Previous country of residence - send the 3 most recent countries.	Code	O	Y			Lead Lab Rpt Observations

PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Valid Values	Data Validation	TAB REFERENCE
LEA137	Travel outside of US	Travel outside of US <Future Functionality>	Code	O		Yes No Unknown		Lead Lab Rpt Observations
LAB202	Test ID	System-assigned local test instance identifier.	Text	R				Lead Lab Rpt Observations
LAB165	Specimen Source	The medium from which the specimen originated. Examples include whole blood, saliva, urine, etc.	Code	R		Hair Semen Blood Urine Blood Venous Saliva Blood Cord Unknown Substance Blood Unknown Tissue Culture Scab Blood Capillary Macular Scraping Buccal Swab Vesicular Swab		Lead Lab Rpt Observations
LAB168	Laboratory Result Jurisdiction	The geographic area responsible for managing public health activities including intervention, prevention and surveillance for health event associated with a particular geographic area such as county or city, associated with an event.	Code	R		state-assigned		Lead Lab Rpt Observations
LAB180	Age at time of laboratory test	Age of subject at time of specimen collection	Numeric	O				Lead Lab Rpt Observations
LAB181	Age units at time of laboratory test	Age units of subject at time of specimen collection.	Code	O		Days Months Weeks Years		Lead Lab Rpt Observations
LAB163	Date of specimen Collection	The date the specimen was collected.	Date	R				Lead Lab Rpt Observations
LAB108	Sample Analyzed Date	The date and time the sample was analyzed by the laboratory.	Date	O				Lead Lab Rpt Observations

PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Valid Values	Data Validation	TAB REFERENCE
LAB197	Result Sent from Lab Date	Date result sent from reporting laboratory.	Date	O				Lead Lab Rpt Observations
LAB113	Numeric Result Descriptor	Lab quantitative result operator.	Coded	O		= > = < = null		Lead Lab Rpt Observations
LAB114	Numeric result value	The first numeric value in the quantitative result.	Numeric	O				Lead Lab Rpt Observations
LAB115	Result units	The unit of measure for a numeric result value.	Code	O		percent gperdL mmolmol ugperL ugperh umolmol mgperL ugpermL ugpersp mL mIU mL IUperL mgperd umold umolL ugperdL mgperh ugperd umol{ZPP}/mol{heme} ngpermL ugperg mgperdL [ppb] [ppm]		Lead Lab Rpt Observations
LAB504	Result Notes	Explanation for missing result, (e.g., clotted, quantity not sufficient, etc.)	Code	O		Unduplicated Wrong Tube Pending Quantity Not Sufficient Test Not Done Clotted Lab Error Contaminated		Lead Lab Rpt Observations

PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Valid Values	Data Validation	TAB REFERENCE
LAB143	Lab Name	Name of Laboratory that reported test result.	Text	O				Lead Lab Rpt Observations
LAB144	CLIA Lab ID	CLIA (Clinical Laboratory Improvement Act) identifier for the laboratory that performed the test.	Text	O				Lead Lab Rpt Observations
LAB120	Limit of detection	Reference range to/limit of detection. The <i>reference range to</i> value allows the user to enter the value on the high end of a valid range of results for the test.	Numeric	O				Lead Lab Rpt Observations
LAB500	Ordering Provider Address - State	Ordering provider address— state.	Code	O				Lead Lab Rpt Observations
LAB501	Ordering Provider Address - City	Ordering provider address— city.	Text	O				Lead Lab Rpt Observations
LAB502	Ordering Provider Address - County	Ordering provider address— county.	Code	O				Lead Lab Rpt Observations
DEM2007	Patient Employer SIC Code	Employer Standard Industrial Classification (SIC) code for the employer associated with the occupation This field may repeat with multiple values.	Code	O				Lead Lab Rpt Observations
DEM2008	Patient Employer NAICS Code	Employer North American Industry Classification System (NAICS) code for the employer associated with the occupation This field may repeat with multiple values.	Code	O				Lead Lab Rpt Observations
DEM139	Census Occupation Code	Patient's Occupation(s). Multiple occupations may be selected.	Code	O				Lead Lab Rpt Observations

## Revisions

Date	Version	Description
8/8/2007	Final V 1.0	<b>Notification Structure tab:</b> Updated the value set and OID references for INV169 condition code.
8/8/2007	Final V 1.0	Added a <b>Data Element Index</b> tab that lists all of the program-specific data elements of interest. The column on the far right of the index contains a reference to the tab on which the data element is mapped to the HL7 message. Since the Valid Values are listed on this tab, the Coded Concepts column was removed from the other tabs.



## Lead Individual Case Notification Message Mapping Guide

### Key to columns in each Tab/Worksheet:

Column	Description
<b>Program Variables Section</b>	
PHIN Variable ID	PHIN element UID drawn from the coding system PH_PHINQuestions_CDC
Label	Short name for the data element, which is passed in the message.
Description	Description of the data element as in PHIN Questions.
Data Type	Data type for the variable response expected by the program area
Prog. Req/Opt	Indicator whether the program specifies the field as: <b>R</b> - Required - mandatory for sending the message <b>O</b> - Optional - if the data is available it should be passed
May Repeat	Indicator whether the response to the data element may repeat. "Yes" in the field indicates that it may; otherwise, the field is not populated. Repeats require special processing.
Value Set Name	Name of the pre-coordinated value set from which the response is drawn. The value sets and coding systems are accessible via the Public Health Information Network Vocabulary Access and Distribution Services at <a href="http://www.cdc.gov/PhinVSBrowser/StrutsController.do">http://www.cdc.gov/PhinVSBrowser/StrutsController.do</a> .
Data Validation	Business rules used for validating data integrity
<b>Message Mapping Methodology Section</b>	
Message Context	Specific HL7 segment and field mapping for the element.
HL7 Data Type	HL7 data type used by PHIN to express the variable.
HL7 Optionality	Indicates if the field is required, optional, or conditional in a segment. The only values that appear in the Message Mapping are: • R – Required. Must always be populated • O – Optional. May optionally be populated.
HL7 Repeats	Indicates whether the field may repeat. The only values that appear in the Message Mapping are: • Y – HL7 allows the field to repeat an indefinite or site-determined number of times. • N or blank – No repetition.
Implementation Notes	Related implementation comments.

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Subject/Demographic Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
DEM197	Local patient ID	The local ID of the patient/entity.	Text	R				PID-3 Patient Identifier List (does not pass Variable ID or label)	CX	R	[1..1]	also shown on Notification Structure tab
DEM147	State patient ID	Patient ID value assigned by the state	Text	O				Observation/OBX Segment with this variable ID and label	ST	O	[0..1]	
DEM115	Birth Date	Reported date of birth of patient.	Date	R				PID-7 Date/Time of Birth (does not pass Variable ID or label)	TS	O	[0..1]	
DEM113	Patient's sex	Patient's current sex.	Code	O		Sex (MFU)		PID-8 Administrative Sex (does not pass Variable ID or label)	IS	O	[0..1]	
DEM152	Race Category	Field containing one or more codes that broadly refer to the patient's race(s).	Code	O	Y	Race Category		PID-10 Race (does not pass Variable ID or label)	CE	O	[0..*]	
DEM153	Detailed Race	A patient record may have zero, one, or multiple detailed race categories assigned. This variable is not passed unless specified for the particular condition.	Code	O	Y	Detailed Race		Observation/OBX Segment with this UID and label under the Patient Subject section header in OBR-4. To keep the race category in context with detailed races, pass the race category in the first instance of this field and the detailed race codes as repeats. If more than one race category was passed in PID-10 Race, use a second OBX Detailed Race segment instance to keep that grouping in context.	CWE	O	Y	

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Subject/Demographic Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
DEM155	Ethnic Group Code	Ethnic origin or ethnicity is based on the individual's self-identity of the patient as Hispanic or Latino; choose one value from the list.	Code	O		Ethnicity Group		PID-22 Ethnic Group (does not pass Variable ID or label)	CE	O	Y	Note that HL7 says this field may repeat but not expecting repeats.
DEM156	Detailed Ethnicity	If the value specified in Ethnicity is Hispanic or Latino, choose detailed ethnicity value(s) that better define the patient's Latino ethnicity; values may include Cuban, Mexican, etc.; choose one or multiple values from this list. This variable is not passed unless specified for the particular condition.	Code	O	Y	Detailed Ethnicity		Observation/OBX Segment with this UID and label under the Patient Subject section header in OBR-4.	CWE	O	Y	
DEM2005	Date of entry into US	Original date of entry into U.S.	Date	O		Country		Observation/OBX Segment with this UID and label under the Patient Subject section header in OBR-4.	CE	O	Y	expecting only one instance
<b>Address Data - note that all addresses related to the patient are sent, so the entire Extended Address construct in PID-11 will repeat.</b>												
DEM2010	Address ID	The system-assigned unique address ID	Text	O	Y			PID-11.2 Patient Address - Other Designation (note that the variable ID and label do not appear in the message)	ST	O	Y	
DEM161	Patient Address City	Patient's address city as text	Text	O	Y			PID-11.3 Patient Address - City (note that the variable ID and label do not appear in the message)	ST	O	Y	

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Subject/Demographic Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
DEM162	Patient Address State	Patient's address state.	Code	O	Y	State		PID-11.4 Patient Address - State (note that the variable ID and label do not appear in the message)	ST	O	Y	
DEM163	Patient Address Zip Code	Patient's address Zip code.	Text	O	Y			PID-11.5 Patient Address - Postal Code (note that the variable ID and label do not appear in the message)	ST	O	Y	
DEM165	Patient Address County	County of residence of the subject.	Code	O	Y	County		PID-11.9 Patient Address - County (note that the variable ID and label do not appear in the message)	IS	O	Y	
DEM168	Census Tract	Census tract where the address is located is a unique identifier associated with a small statistical subdivision of a county. Census tract data allows a user to find population and housing statistics about a specific part of an urban area. A single community may be composed of several census tracts.	Text	O	Y			PID-11.10 Patient Address - Census Tract (note that the variable ID and label do not appear in the message)	IS	O	Y	Census codes not in PHIN-VADS - treated as a user-defined code passed without description or OID
DEM169	Residence From Date	Residence <i>From</i> date.	Date	O	Y			PID-11.13 Patient Address - Effective Date (note that the variable ID and label do not appear in the message)	TS	O	Y	

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Subject/Demographic Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
DEM170	Residence To Date	Residence <i>To</i> date.	Date	O	Y			PID-11.14 Patient Address - Expiration Date (note that the variable ID and label do not appear in the message)	TS	O	Y	
End of repeating address info that is passed in PID-11												
DEM171	Patient's City – Coded	Patient's address city as encoded value. This field will repeat a coded Place value for each city string in the repeating address field, and in the same order in which the address was presented.	Code	O	Y	City	Entire address construct repeats.	Observation/OBX segment for FIPS city/place codes derived from the repeating address field contents in PID-11. This UID and description are in OBX-3.	CWE	O	Y	

The generic surveillance elements that are not used for the Lead Laboratory Report notification are shaded.

Generic Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
NOT109	Reporting State	State reporting the notification.	Code	R		State		Observation/OBX Segment with this variable ID and label	CWE	O	Y	expecting only one instance
NOT113	Reporting County	County reporting the notification.	Code	R		County		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV169	Condition Code	Condition or event that constitutes the reason the notification is being sent.	Code	R		Nationally Notifiable Infectious Disease (NNID) reportable to the Nationally Notifiable Disease Surveillance System (NNDSS)	must be 32010 Lead Poisoning	(note that this is a Notification structural element, so it appears twice in this Guide)	CE	O	Y	expecting only one instance
INV168 (see LAB202 Test ID)	Record ID	System-assigned local ID of the investigation with which the case subject/entity is associated.	Alphanumeric	R				OBR-3.1 Filler Order Number (note that the variable ID and label do not appear in the message)	EI	R	Y	Also on the Notification Structure tab
INV172	Local Case ID	Official local (city/county) identification number for the case	Alphanumeric	O				Observation/OBX Segment with this UID and label	ST	O	Y	
INV173	State Case ID	Official state identification number for the case; used by the state and the CDC to identify the case in communications.	Alphanumeric	R				Observation/OBX Segment with this UID and label	ST	O	Y	
INV107	Jurisdiction Code	Identifier for the physical site from which the report is being submitted. Jurisdictions are defined by the reporting entity.	Code	R				Observation/OBX Segment with this variable ID and label	IS	R	Y	

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Generic Surveillance Variables								Mapping Methodology				
INV108	Case Program Area Code	The organizational ownership of the investigation. Program areas (e.g., Immunization, STD) are defined at the state level by the conditions for which they provide primary prevention and control.	Code	O				Observation/OBX Segment with this variable ID and label	IS	O	Y	
INV109	Case Investigation Status Code	Status of the investigation. For example, <i>open</i> or <i>closed</i> .	Code	O				Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV2006	Case Close Date	Date the case investigation status was marked as Closed.	Date	O			If the user selects a Case Status = 'Closed' then the system will require the entry of the Date Closed and Closure Reason and will default the Date Closed to current date If the user enters the Date Closed for a case then the date must be >= Date Opened	Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV110	Investigation Date Assigned	Date the investigator was assigned to this investigation.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV111	Date of Report	Date the event or illness was first reported by the reporting source	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV112	Reporting Source Type Code	Type of facility or provider associated with the source of information sent to Public Health.	Code	O		Reporting Source Type NND		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV114	Reporting Source Name	Name of the provider reporting the case (typically the patient's primary care provider)	Alphanumeric	O				Observation/OBX Segment with this variable ID and label	ST	O	Y	



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Generic Surveillance Variables								Mapping Methodology				
INV115a	Reporting Source Address Line 1	Reporting source street address Line 1	Alphanumeric	O				Observation/OBX Segment with this variable ID and label	ST	O	Y	
INV115b	Reporting Source Address Line 2	Reporting source street address Line 2	Alphanumeric	O				Observation/OBX Segment with this variable ID and label	ST	O	Y	
INV116	Reporting Source Address City	Reporting source address city	Code	O		City		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV117	Reporting Source Address State	Reporting source address state	Code	O		State		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV118	Reporting Source Zip Code	Zip Code of the reporting source for this case.	Alphanumeric	O				Observation/OBX Segment with this variable ID and label	ST	O	Y	
INV119	Reporting Source Address County	Reporting source address county	Code	O		County		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV120	Earliest Date Reported to County	Earliest date reported to county public health system	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV121	Earliest Date Reported to State	Earliest date reported to state public health system	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV122	Reporting Source Telephone Number	Reporting source telephone number	Alphanumeric	O				Observation/OBX Segment with this variable ID and label	ST	O	Y	

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Generic Surveillance Variables								Mapping Methodology				
INV128	Hospitalized	Was patient hospitalized because of this event?	Code	O		Yes No Unknown (YNU)	1) If the patient was hospitalized for this illness, then enable entry of admission date 2) If the patient was hospitalized for this illness, then enable entry of discharge date 3) If the patient was hospitalized for this illness, then enable entry of total duration of stay in the hospital in days 4) If the patient was hospitalized for this illness, then enable entry of hospital information	Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV129	Hospital Name	Name of the healthcare facility in which the subject was hospitalized.	Alphanumeric	O				Observation/OBX Segment with this variable ID and label	ST	O	Y	
INV132	Admission Date	Subject's admission date to the hospital for the condition covered by the investigation.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV133	Discharge Date	Subject's discharge date from the hospital for the condition covered by the investigation.	Date	O		If the user enters the Discharge Date, then the date must be >= Admission Date		Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV134	Duration of hospital stay in days	Subject's duration of stay at the hospital for the condition covered by the investigation.	Numeric	O				Observation/OBX Segment with this variable ID and label	SN	O	Y	

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Generic Surveillance Variables								Mapping Methodology				
INV136	Diagnosis Date	Date of diagnosis of condition being reported to public health system	Date	O			1) If the user enters the Diagnosis Date, then the date must be >= Illness Onset Date 2) If the user enters the Diagnosis Date, then the date must be >= Rash Onset Date	Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV137	Date of Illness Onset	Date of the beginning of the illness. Reported date of the onset of symptoms of the condition being reported to the public health system	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV138	Illness End Date	Time at which the disease or condition ends.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV139	Illness Duration	Length of time this person had this disease or condition.	Numeric	O				Observation/OBX Segment with this variable ID and label	SN	O	Y	
INV140	Illness Duration Units	Unit of time used to describe the length of the illness or condition.	Code	O		Duration Unit (UCUM)		Observation/OBX Segment with this variable ID and label	CE	O	Y	
INV145	Did the patient die from this illness	Did the patient die from this illness or complications of this illness?	Code	O		Yes No Unknown (YNU)		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV146	Date of death	The date and time the subject's death occurred.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	

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Generic Surveillance Variables								Mapping Methodology				
INV147	Case Start Date	The date the case investigation was initiated.	Date	R			If the user enters the case Date Opened then the date must be <= current date (done in questions.txt), >=Patient Date of Birth, and >= Sample Draw Date (if case triggered from Elevated BLL)	Observation/OBX Segment with this variable ID and label	TS	R	Y	
INV150	Case outbreak indicator	Denotes whether the reported case was associated with an identified outbreak.	Code	O			If this case is part of an outbreak of 5 or more cases, then enable entry of outbreak name (INV151)	Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV151	Case Outbreak Name	A state-assigned name for an indentified outbreak.	Code	O		Yes No Unknown (YNU)		Observation/OBX Segment with this variable ID and label	IS	O	Y	
INV152	Case Disease Imported Code	Indication of where the disease/condition was likely acquired.	Code			Disease Acquired Jurisdiction		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV153	Imported Country	If the disease or condition was imported, indicates the country in which the disease was likely acquired.	Code	O		Country		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV154	Imported State	If the disease or condition was imported, indicates the state in which the disease was likely acquired.	Code	O		State		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV155	Imported City	If the disease or condition was imported, indicates the city in which the disease was likely acquired.	Code	O		City		Observation/OBX Segment with this variable ID and label	CWE	O	Y	

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Generic Surveillance Variables								Mapping Methodology				
INV156	Imported County	If the disease or condition was imported, contains the county of origin of the disease or condition.	Code	O		County		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV157	Transmission Mode	Code for the mechanism by which disease or condition was acquired by the subject of the investigation. Includes sexually transmitted, airborne, bloodborne, vectorborne, foodborne, zoonotic, nosocomial, mechanical, dermal, congenital, environmental exposure, indeterminate.	Code	O		Case Transmission Mode		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV159	Detection Method	Code for the method by which the public health department was made aware of the case. Includes provider report, patient self-referral, laboratory report, case or outbreak investigation, contact investigation, active surveillance, routine physical, prenatal testing, perinatal testing, prison entry screening, occupational disease surveillance, medical record review, etc.	Code	O		Case Detection Method		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV161	Confirmation Method	Code for the mechanism by which the case was classified, providing information about how the case classification status was derived. More than one confirmation method may be indicated.	Code	O	Y	Case Confirmation Method		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV162	Confirmation Date	If an investigation is confirmed as a case, the confirmation date is entered.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	

The generic surveillance elements that are not used for the Lead Laboratory Report notification are shaded.

Generic Surveillance Variables								Mapping Methodology				
INV163	Case Class Status Code	Status of the case/event as suspect, probable, confirmed, or "not a case" per CSTE/CDC/ surveillance case definitions.	Code	R		Case Class Status		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV165	MMWR Week	MMWR Week for which case information is to be counted for MMWR publication.	Numeric	R				Observation/OBX Segment with this variable ID and label	SN	O	Y	
INV166	MMWR Year	MMWR Year (YYYY) for which case information is to be counted for MMWR publication.	Date	R		Case Class Status		Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV173	State Case ID	Official state identification number for the case; used by the state and the CDC to identify the case in communications.	Alphanumeric	R				Observation/OBX Segment with this variable ID and label	ST	O	Y	
INV176	Date of First Report to CDC	Date the case was first reported to the CDC.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV177	Date First Reported PHD	Earliest date the case was reported to a public health department.	Date	O				Observation/OBX Segment with this variable ID and label	TS	O	Y	
INV178	Pregnancy Status	Indicates whether the patient was pregnant during the event.	Code	O		Yes No Unknown (YNU)		Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV179	PID	Indicates whether or not the patient has pelvic inflammatory disease (PID).	Code			Only valid for female patients.	Yes No Unknown (YNU)	Observation/OBX Segment with this variable ID and label	CWE	O	Y	
INV2001	Age at time of case investigation	Patient age at time of case investigation	Numeric	O			age units required	Observation/OBX Segment with this variable ID and label	SN	R	Y	
INV2002	Age units at time of case investigation	Patient age units at time of case investigation	Code	O		Age unit		uses the INV2001 observation - maps to OBX-6-Units (does not use INV2002 ID or label)	CE	O	Y	

Lead Laboratory Report Notification Message Mapping Guide

Lead Lab Report Notification Variables

Program-Specific Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
LEA105	Previous country of residence	Previous country of residence - send the 3 most recent countries.	Code	O	Y	Country		Observation/OBX Segment with this UID and label under the Patient Subject section header in OBR-4.	CWE	O	Y	expecting only one instance
LEA137	Travel outside of US	Travel outside of US <Future Functionality>	Code	O		Yes No Unknown (YNU)		Observation/OBX Segment with this UID and label under the Patient Subject section header in OBR-4.	CWE	O	Y	expecting only one instance
LAB202	Test ID	System-assigned local test instance identifier.	Text	R				OBR-3.1 Filler Order Number (note that the variable ID and label do not appear in the message)	EI	R		Also on the Notification Structure tab
LAB165	Specimen Source	The medium from which the specimen originated. Examples include whole blood, saliva, urine, etc.	Code	R		Specimen		Observation/OBX Segment with this variable ID and label	CWE	O	Y	expecting only one instance
LAB168	Laboratory Result Jurisdiction	The geographic area responsible for managing public health activities including intervention, prevention and surveillance for health event associated with a particular geographic area such as county or city, associated with an event.	Code	R				Observation/OBX Segment with this variable ID and label	IS	O	Y	expecting only one instance
LAB180	Age at time of laboratory test	Age of subject at time of specimen collection	Numeric	O				(note that the variable ID and label do not appear in the message)	SN	O	Y	expecting only one instance
LAB181	Age units at time of laboratory test	Age units of subject at time of specimen collection.	Code	O		Age Unit		(Same Observation/OBX segment as LAB180 - age units maps to <i>OBX-6-Units</i> )	CWE	O	Y	expecting only one instance

Lead Laboratory Report Notification Message Mapping Guide

Program-Specific Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
LAB163	Date of specimen Collection	The date the specimen was collected.	Date	R				Observation/OBX Segment with this variable ID and label	TS		Y	expecting only one instance
LAB108	Sample Analyzed Date	The date and time the sample was analyzed by the laboratory.	Date	O				Observation/OBX Segment with this variable ID and label	TS		Y	expecting only one instance
LAB197	Result Sent from Lab Date	Date result sent from reporting laboratory.	Date	O				Observation/OBX Segment with this variable ID and label	TS		Y	expecting only one instance
<b>NUMERIC RESULT GROUP - all these fields occupy the same Observation/OBX segment - uses LAB114 Numeric Result as the observation identifier</b>												
LAB113	Numeric Result Descriptor	Lab quantitative result operator.	Coded	O				OBX Segment tagged with 'LAB114^Numeric result' in OBX-3. This is the value for OBX-5.1. Structured Numeric result in OBX-5 - component 1, the operator, is treated as a string by HL7.	ST		Y	expecting only one instance
LAB114	Numeric result value	The first numeric value in the quantitative result.	Numeric	O			if numeric result not available, must enter LAB504 Result Notes	OBX Segment tagged with 'LAB114^Numeric result' in OBX-3. This is the value for OBX-5.2. Structured Numeric result in OBX-5 - component 2, the first numeric result field.	NM		Y	expecting only one instance
LAB115	Result units	The unit of measure for a numeric result value.	Code	O		Units of measure		Same OBX Segment as 'LAB114^Numeric result' in OBX-3. This is the value for OBX-6.	CE			
<b>End of LAB114 Numeric Result Observation</b>												
LAB504	Result Notes	Explanation for missing result, (e.g., clotted, quantity not sufficient, etc.)	Code	O		Missing Lab Result Reason		Observation/OBX Segment with this variable ID and label	CWE		Y	expecting only one instance
<b>Laboratory Data</b>												



Lead Laboratory Report Notification Message Mapping Guide

Program-Specific Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
LAB143	Lab Name	Name of Laboratory that reported test result.	Text	O				Observation/OBX Segment with this variable ID and label	ST		Y	expecting only one instance
LAB144	CLIA Lab ID	CLIA (Clinical Laboratory Improvement Act) identifier for the laboratory that performed the test.	Text	O				Observation/OBX Segment with this variable ID and label	ST		Y	expecting only one instance
LAB120	Limit of detection	Reference range to/limit of detection. The <i>reference range</i> to value allows the user to enter the value on the high end of a valid range of results for the test.	Numeric	O				Observation/OBX Segment with this variable ID and label	SN		Y	expecting only one instance
<b>Provider Data</b>												
LAB500	Ordering Provider Address - State	Ordering provider address—state.	Code	O		State		Observation/OBX Segment with this variable ID and label	CWE		Y	expecting only one instance
LAB501	Ordering Provider Address - City	Ordering provider address— city.	Text	O		City		Observation/OBX Segment with this variable ID and label	CWE		Y	expecting only one instance
LAB502	Ordering Provider Address - County	Ordering provider address— county.	Code	O		County		Observation/OBX Segment with this variable ID and label	CWE		Y	expecting only one instance
<b>ABLES Data</b>												
DEM2007	Patient Employer SIC Code	Employer Standard Industrial Classification (SIC) code for the employer associated with the occupation This field may repeat with multiple values.	Code	O	Y	Industry (SIC)		Observation/OBX Segment with this variable ID and label	CWE		Y	
DEM2008	Patient Employer NAICS Code	Employer North American Industry Classification System (NAICS) code for the employer associated with the occupation. This field may repeat with multiple values.	Code	O	Y	Industry (NAICS)		Observation/OBX Segment with this variable ID and label	CWE		Y	

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Program-Specific Surveillance Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	Prog. Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
DEM139	Census Occupation Code	Patient's Occupation(s). Multiple occupations may be selected.	Code	O	Y	Occupation		Observation/OBX Segment with this variable ID and label	CWE		Y	

Lead Laboratory Report Notification Message Mapping Guide

These variables are not negotiable. Default values are provided for HL7 structural elements that are required but not part of the surveillance data requested.

Notification Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
NOT108	Notification ID	The unique identifier for the notification record. For the V2 Case Notification, this concept maps to the HL7 attribute MSH-10 Message Control ID. No UID or label is passed in the message.	String	R				MSH-10-Message Control ID. No UID or label is passed in the message.	ST	R		
DEM197	Local patient ID	The local ID of the patient/entity.	String	R				PID-3.1 Patient Identifier List – ID Number PID-3.4 Assigning Authority format <localID&OID&ISO> Does not pass Variable ID or label.	CX	R	Y	Only the sending system's internally assigned patient id expected for these de-identified messages
DEM100	Patient name type	Name is not requested by the program, but the Patient Name field is required to be populated for the HL7 message to be valid. Have adopted the HL7 convention for processing a field where the name has been removed for de-identification purposes.	Coded	R		Name Type		PID-5.7 Patient Name Type - <u>second instance</u> (does not pass Variable ID or label). HL7 reserves the first instance of the name for Legal Name.	CX	R	Y	Literal value:  ~^S

Lead Laboratory Report Notification Message Mapping Guide

Notification Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
LAB202	Test ID	Local test identifier	Text	R				OBR-3.1 Filler Order Number (note that the variable ID and label do not appear in the message)	EI	R		
NOT099	Subject Type	Type of subject for the notification.	Coded	R		Notification Section Header		OBR 1 : Maps to the HL7 attribute OBR-4-Universal Service ID. No UID or label is passed in the message.	CE	R		Literal Value: 'PERSUBJ^Person Subject'^2.16.840.1.114222.4.5.274'
NOT101	Notification Type	Type of notification. Main notification types are "Individual Case", "Environmental", "Summary", and "Laboratory Report".	Coded	R		Notification Section Header		OBR 2 : Maps to the HL7 attribute OBR-4-Universal Service ID. No UID or label is passed in the message.	CE	R		Literal Value: 'LABNTF^Laboratory Report Notification'^2.16.840.1.114222.4.5.274'
NOT103	Date First Submitted	Date the notification was first sent to CDC. This value does not change after the original notification. For the V2 Case Notification, this concept maps to the HL7 attribute OBR-7-Observation Date/time. No UID or label is passed in the message.	Date/time	R				Maps to the HL7 attribute OBR-7-Observation Date/time. No UID or label is passed in the message.	TS	R		<same value in each OBR instance>

Lead Laboratory Report Notification Message Mapping Guide

Notification Variables								Mapping Methodology				
PHIN Variable ID	Label/Short Name	Description	Data Type	CDC Req/Opt	May Repeat	Value Set Name	Data Validation	Message Context	HL7 Data Type	HL7 Optionality	HL7 Repeats	Implementation Notes
NOT106	Date of Report	Date/time this version of the notification was sent. It will be the same value as NOT103 for the original notification. For updates, this is the update/send date/time.	Date/time	R				Maps to the HL7 attribute OBR-22-Result Report/Status Chg Date/time. No UID or label is passed in the message.	TS	R		<same value in each OBR instance>
NOT108	Notification ID	The unique identifier for the notification record. For the V2 Case Notification, this concept maps to the HL7 attribute MSH-10 Message Control ID. No UID or label is passed in the message.	Alphanumeric	R				Maps to the HL7 attribute MSH-10-Message Control ID. No UID or label is passed in the message.	ST	R		
INV169	Condition Code	Condition or event that constitutes the reason the notification is being sent.	Coded	R		Nationally Notifiable Disease Surveillance System (NNDSS) & Other Conditions of Public Health Importance		Maps to HL7 attribute OBR-31-Reason for Study. The UID and label are not passed in the message.	CE	R	Y	Default value in each OBR instance: '32010^Lead Poisoning^2.16.840.1.114222.4.5.277'



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